

In re Patent Application of:
DI BERNARDO ET AL.
Serial No. 09/747,786
Filing Date: December 22, 2000

In the Claims:

Claims 1 to 8 (Cancelled).

9. (Previously Presented) A communication system comprising:

- a transmission channel;
- a signal source for providing a discrete signal;
- a chaotic modulator for modulating the discrete signal for transmitting over said transmission channel; and
- an incoherent discriminator for receiving the modulated discrete signal from said transmission channel.

10. (Previously Presented) A communication system according to Claim 9, wherein said incoherent discriminator comprises:

- a high-pass filter;
- a rectifier connected to an output of said high-pass filter; and
- a low-pass filter connected to an output of said rectifier.

11. (Previously Presented) A communication system according to Claim 10, wherein said incoherent discriminator further comprises a comparator connected to an output of said low-pass filter.

12. (Previously Presented) A communication system according to Claim 9, wherein said incoherent discriminator is self-synchronizing.

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13. (Previously Presented) A communication system according to Claim 9, wherein said signal source generates a low logic value signal having associated therewith a chaotic evolution corresponding to a complete Chua's attractor.

14. (Previously Presented) A communication system according to Claim 9, wherein said incoherent discriminator comprises:

a low-pass filter;

a null-threshold comparator connected to an output of said low-pass filter for providing a square-wave output signal; and

a divider connected an output of said comparator for scaling the square-wave output signal.

15. (Previously Presented) A communication system according to Claim 14, wherein said signal source generates a low logic value signal that is associated with a chaotic dynamics corresponding to a left-hand lobe of a Chua's attractor.

16. (Previously Presented) A communication system according to Claim 14, wherein said low-pass filter is a fourth order filter.

17. (Previously Presented) A communication system comprising:

a digital signal source for providing a digital signal;

a chaotic modulator for modulating the digital

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signal for transmitting over a transmission channel; and
an incoherent discriminator for receiving the
modulated digital signal from the transmission channel, said
incoherent discriminator comprising

a high-pass filter,
a rectifier connected to an output of said
high-pass filter, and
a low-pass filter connected to an output of
said rectifier.

18. (Previously Presented) A communication system
according to Claim 17, wherein said incoherent discriminator
further comprises a comparator connected to an output of said
low-pass filter.

19. (Previously Presented) A communication system
according to Claim 17, wherein said incoherent discriminator
is self-synchronizing.

20. (Previously Presented) A communication system
according to Claim 17, wherein said digital signal source
generates a low logic value signal having associated therewith
a chaotic evolution corresponding to a complete Chua's
attractor.

21. (Previously Presented) A communication system
comprising:

a digital signal source for providing a digital
signal;
a chaotic modulator for modulating the digital

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signal for transmitting over a transmission channel; and
an incoherent discriminator for receiving the
modulated digital signal, said incoherent discriminator
comprising

a low-pass filter,
a null-threshold comparator connected to an
output of said low-pass filter for providing a
square-wave output signal, and
a divider connected an output of said
comparator for scaling the square-wave output
signal.

22. (Previously Presented) A communication system
according to Claim 21, wherein said digital signal source
generates a low logic value signal having associated therewith
a chaotic evolution corresponding to a complete Chua's
attractor.

23. (Previously Presented) A communication system
according to Claim 21, wherein said digital signal source
generates a low logic value that is associated with a chaotic
dynamics corresponding to a left-hand lobe of a Chua's
attractor.

24. (Previously Presented) A communication system
according to Claim 21, wherein said low-pass filter is a
fourth order filter.

25. (Previously Presented) A method for
transmitting a signal over a transmission channel, the method

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comprising:

generating a discrete signal;
modulating the discrete signal using a chaotic
modulator for transmitting over the transmission channel; and
receiving the modulated discrete signal from the
transmission channel using an incoherent discriminator.

26. (Previously Presented) A method according to
Claim 25, wherein receiving the modulated discrete signal
comprises:

filtering the modulated discrete signal using a
high-pass filter;
rectifying the filtered signal from the high-pass
filter; and
filtering the rectified signal from the high-pass
filter using a low-pass filter.

27. (Previously Presented) A method according to
Claim 26, further comprising using a comparator for a
generating square wave signal from the filtered signal
provided by the low-pass filer.

28. (Previously Presented) A method according to
Claim 25, wherein the incoherent discriminator is self-
synchronizing.

29. (Previously Presented) A method according to
Claim 25, wherein a signal source generates a low logic value
signal that is associated with a chaotic dynamics
corresponding to a left-hand lobe of a Chua's attractor.

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30. (Previously Presented) A method according to Claim 25, further comprising:

filtering the modulated signal using a low-pass filter;

providing a square-wave output signal using a null-threshold comparator connected to an output of the low-pass filter; and

scaling the square-wave output signal using a divider connected an output of the comparator.

31. (Previously Presented) A method according to Claim 30, wherein the signal source generates a low logic value that is associated with a chaotic dynamics corresponding to a left-hand lobe of a Chua's attractor.

32. (Previously Presented) A method according to Claim 25, wherein the low-pass filter is a fourth order filter.